Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL GUIDELINE CLEARINGHOUSE

General

Guideline Title

Anemia in the long-term care setting.

Bibliographic Source(s)

American Medical Directors Association (AMDA). Anemia in the long-term care setting. Columbia (MD): American Medical Directors Association (AMDA); 2007. 28 p. [65 references]

Guideline Status

This is the current release of the guideline.

The American Medical Directors Association (AMDA) reaffirmed the currency of the guideline in 2011.

Recommendations

Major Recommendations

The algorithm Anemia in the Long-Term Care Setting is to be used in conjunction with the clinical practice guideline. The numbers next to the different components of the algorithm correspond with the steps in the text. Refer to the "Guideline Availability" field for information on obtaining the full text guideline.

Clinical Algorithm(s)

A clinical algorithm is provided for Anemia in the Long-Term Care Setting.

An algorithm for Diagnosis of Anemia Using Red Cell Morphology is also provided in the original guideline document.

Scope

Disease/Condition(s)

Anemia

Iron-deficiency anemia

Vitamin B_{12}-deficiency anemia

Folate-deficiency anemia

Anemia of chronic disease/chronic inflammation

Unexplained anemia

Hemolytic anemia

Guideline Category

Diagnosis

Evaluation

Management

Risk Assessment

Treatment

Clinical Specialty

Family Practice

Geriatrics

Hematology

Internal Medicine

Nursing

Nutrition

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Dietitians

Nurses

Pharmacists

Physical Therapists

Physician Assistants

Physicians

Social Workers

Guideline Objective(s)

To improve the quality of care delivered to patients in long-term care settings

To offer care providers and practitioners in long-term care facilities a systematic approach to recognizing, assessing, treating, and monitoring patients with anemia

Target Population

Elderly residents of long-term care facilities with anemia

Interventions and Practices Considered

Recognition/Assessment

- Assess the patient's medical history and hematologic status (complete blood count [CBC] test, assessment of nonspecific signs and symptoms that may indicate anemia)
- Assess the patient for anemia risk factors
- Determine whether an additional diagnostic workup of anemia is appropriate
- Laboratory evaluation including CBC with reticulocyte count; morphology examination by peripheral smear; ferritin, serum iron, and total iron-binding capacity; serum folate and vitamin B_{12}; hepatic and renal function; sedimentation rate; stool for occult blood; and others
- Identify specific characteristics and causes of the patient's anemia such as acute or chronic blood loss, chronic diseases, nutritional deficiencies, medications

Management/Treatment

- Manage iron-deficiency anemia (oral or parenteral iron, iron-rich foods)
- Manage vitamin B_{12}-deficiency anemia (oral or parenteral vitamin B_{12}, foods that are good sources of vitamin B_{12} such as liver, other meats, fish, poultry, eggs)
- Manage folate-deficiency anemia (oral folic acid, folic-rich foods such as leafy vegetables, nuts, whole grains)
- Manage anemia of chronic disease/chronic inflammation (treatment of the underlying disease)
- Manage anemia associated with chronic kidney disease (subcutaneous or intravenous erythropoietin-stimulating agents [ESAs])
- Blood transfusions

Monitoring

- Monitor the patients response to interventions and adjusting treatment if necessary
- Monitor the impact of anemia on the patient
- Monitor the facility's management of anemia

Major Outcomes Considered

- Efficacy of anemia treatment
  - Physical, social, cognitive functioning
  - Laboratory values (e.g. hemoglobin, hematocrit)
  - Quality of life
  - Signs and symptoms of anemia
  - Complications associated with anemia
- Adverse effects of anemia treatment

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

2007 Guideline

Not stated

2011 Reaffirmation

MEDLINE, PubMed, etc. was searched for updated literature related to this subject between June 2009-January 2011. This search is done annually and completed by the clinical practice committee vice-chair. If new literature does not change the content or scope of the original guideline, it is deemed to be current.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

This guideline was developed by an interdisciplinary workgroup, using a process that combined evidence and consensus-based approaches. Workgroups include practitioners and others involved in patient care in long-term care facilities. Beginning with a general guideline developed by an agency, association, or organization such as the Agency for Healthcare Research and Quality (AHRQ), pertinent articles and information, and a draft outline, each group works to make a concise, usable guideline that is tailored to the long-term care setting. Because scientific research in the long-term care population is limited, many recommendations are based on the expert opinion of practitioners in the field.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Guideline revisions are completed under the direction of the Clinical Practice Guideline Steering Committee. The committee incorporates information published in peer-reviewed journals after the original guidelines appeared, as well as comments and recommendations not only from experts in the field addressed by the guideline but also from "hands-on" long-term care practitioners and staff.

All American Medical Directors Association (AMDA) clinical practice guidelines undergo external review. The draft guideline is sent to approximately 175+ reviewers. These reviewers include AMDA physician members and independent physicians, specialists, nurse practitioners, pharmacists, consultants in the specified area, and organizations that are knowledgeable of the guideline topic and the long-term care setting.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

The guideline was developed by an interdisciplinary work group using a process that combined evidence- and consensus-based thinking.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Outcomes that may be expected from the implementation of this guideline include the following:

- Better recognition and more appropriate management of anemia.
- Comprehensive evaluation of the causes of anemia when appropriate.
- Adequate assessment and monitoring of anemia.
- Improvement in patients' functional status, cognitive function, exercise performance, and quality of life.
- Reduced morbidity and mortality.
- Reduced medical care costs as a result of treatment of identifiable causes of anemia.

Potential Harms

Adverse Effects of Anemia Treatment

- Common side effects of *oral iron* include abdominal cramps, constipation, diarrhea, dyspepsia, iron overload, nausea and vomiting
- Adverse effects of *parenteral iron* include allergic reactions, backache, chest pain, chills, dizziness, fever with increased sweating, flank, groin or redness of skin, headache, hypotension (refer to Table 17 in the original guideline document for additional information on adverse effects of parenteral iron). Anaphylactic or anaphylactoid reactions which are rare but potentially lethal, typically occur within several minutes of administration. Personnel trained to provide emergency treatment for severe allergic or anaphylactic reactions should be available in the event of such an emergency.
- *Folate therapy* will worsen a co-existing B_{12} deficiency and may allow progression of neurological features of the co-existing B_{12} deficiency
- *Erythropoietin-stimulating agents (ESAs)* may cause or worsen hypertension. Excessive dose or duration can lead to polycythemia and dangerous thrombotic events, including myocardial infarction and stroke.
- The U.S. Food and Drug Administration (FDA) currently advises practitioners to follow dosing recommendations in the labeling for ESAs and ensure that hemoglobin is maintained in a range between 10 g/dL and 12 g/dL. The FDA further advises that after initiation of an ESA

or adjustment of the dose, the practitioner should measure the patient's hemoglobin twice a week for 2–6 weeks to ensure that it has stabilized. The ESA dose should be decreased if the patient's hemoglobin increases by more than 1 g/dL in any 2-week period. Practitioners should be aware that it may take between 2 and 6 weeks after a dosage adjustment for a significant change in hemoglobin to be observed.

Patients with uncontrolled hypertension should not receive ESAs.

Adverse effects of *blood transfusion* include anaphylaxis, chills, fever, bloodborne infection, and transfusion reaction.

Qualifying Statements

Qualifying Statements

This clinical practice guideline is provided for discussion and educational purposes only and should not be used or in any way relied upon without consultation with and supervision of a qualified physician based on the case history and medical condition of a particular patient. The American Medical Directors Association, its heirs, executors, administrators, successors, and assigns hereby disclaim any and all liability for damages of whatever kind resulting from the use, negligent or otherwise, of this clinical practice guideline.
The utilization of the American Medical Director Association's Clinical Practice Guideline does not preclude compliance with State and Federal regulation as well as facility policies and procedures. They are not substitutes for the experience and judgment of clinicians and care-givers. The Clinical Practice Guidelines are not to be considered as standards of care but are developed to enhance the clinician's ability to practice.

Implementation of the Guideline

Description of Implementation Strategy

The implementation of all clinical practice guidelines (CPGs) is outlined in four phases. Each phase presents a series of steps, which should be carried out in the process of implementing the practices presented in this guideline. Each phase is summarized below.

Recognition

Define the area of improvement and determine if there is a CPG available for the defined area. Then evaluate the pertinence and feasibility of implementing the CPG

Assessment

Define the functions necessary for implementation and then educate and train staff. Assess and document performance and outcome indicators and then develop a system to measure outcomes

Implementation

Identify and document how each step of the CPG will be carried out and develop an implementation timetable
Identify individual responsible for each step of the CPG
Identify support systems that impact the direct care
Educate and train appropriate individuals in specific CPG implementation and then implement the CPG

Monitoring

Evaluate performance based on relevant indicators and identify areas for improvement
Evaluate the predefined performance measures and obtain and provide feedback

Implementation Tools

Clinical Algorithm

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2007 (reaffirmed 2011)

Guideline Developer(s)

American Medical Directors Association - Professional Association

Guideline Developer Comment

Organizational participants included:

- American Association of Homes and Services for the Aging
- American College of Health Care Administrators
- American Geriatrics Society
- American Health Care Association
- American Society of Consultant Pharmacists
- National Association of Directors of Nursing Administration in Long-Term Care
- National Association of Geriatric Nursing Assistants
- National Conference of Gerontological Nurse Practitioners

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Guideline Committee

Steering Committee

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

This is the current release of the guideline.

The American Medical Directors Association (AMDA) reaffirmed the currency of the guideline in 2011.

Guideline Availability

Electronic copies: None available

Print copies: Available from the American Medical Directors Association, 10480 Little Patuxent Pkwy, Suite 760, Columbia, MD 21044. Telephone: (800) 876-2632 or (410) 740-9743; Fax (410) 740-4572. Web site: www.amda.com

Availability of Companion Documents

None available

Patient Resources

None available

NGC Status

This summary was completed by ECRI Institute on July 9, 2007. The information was verified by the guideline developer on August 23, 2007. This summary was updated by ECRI Institute on March 21, 2008 following the FDA advisory on Erythropoiesis Stimulating Agents. This summary was updated by ECRI Institute on August 15, 2008 following the U.S. Food and Drug Administration advisory on Erythropoiesis Stimulating Agents (ESAs). This summary was updated by ECRI Institute on April 1, 2010 following the U.S. Food and Drug Administration advisory on Erythropoiesis-Stimulating Agents (ESAs). This summary was updated by ECRI Institute on July 15, 2011 following the U.S. Food and Drug Administration advisory on erythropoiesis-stimulating agents (ESAs) in chronic kidney disease. The currency of the guideline was reaffirmed by the developer in 2011 and this summary was updated by ECRI Institute on October 22, 2012.

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